

**From:** [Chris Hill \(Regulatory\)](#)  
**To:** [Michael Overbay/R6/USEPA/US@EPA](#)  
**Cc:** [Doug Beak/ADA/USEPA/US@EPA](#); [David Jewett/ADA/USEPA/US@EPA](#); [John Satterfield](#); [Bert Smith](#); [Tamara Robbins](#); [Stephanie Timmermeyer](#)  
**Subject:** RE: QAPP and contact info  
**Date:** 05/04/2012 10:48 AM  
**Attachments:** [EPA CHK Case Study QAPP working copy 121611 \(CHK Comments 1-6-2012\).docx](#)  
[EPA CHK Case Study QAPP working copy 121611 \(CHK Comments 1-6-2012\).docx](#)

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Hi Mike,

You are correct, I did owe you Bert's contact information (See below). Please keep John Satterfield and Stephanie Timmermeyer included in email correspondence as well. For your information I believe Bert is out of the office today (5/4/12).

Bert Smith  
Work: 405-935-1270  
Email:bert.smith@chk.com

As you requested, I have attached a copy of our QAPP comments that we sent to Doug Beak on 1/6/12 for your reference. Based on our conversation on Tuesday, it would be beneficial for EPA finalize this QAPP in parallel with the site characterization work. I am comfortable having you incorporate the specific technical comments in to the QAPP, however, I would appreciate a formal response to the critical items listed in the CHK cover letter. Based on our April 18, 2012 conference call, we are operating with the following understanding:

1. EPA agrees with the timing (i.e., after well construction and pre-HF) of the installation of horizontal wells, if they are even necessary.
2. EPA is willing to accept any and all liabilities associated their actions on the project and is self-insured. The EPA project team has initiated discussions with their general counsel.
3. EPA is willing to maintain a buffer of 30 ft. when installing the horizontal wells.
4. EPA will have a detailed procedure for abandoning the horizontal monitoring wells prior to their construction.
5. EPA plans to include language in the final study plan regarding our concern and the limitations of horizontal monitoring wells.

I appreciate you touching base with Steve V. regarding the QA requirements for the site characterization scope of work. This is valuable information for me to communicate to CHK management as they deliberate on whether or not CHK will manage and finance this the scope of work.

I have attached below the subcontractor's estimates for drilling and logging for your reference.

TASK DESCRIPTION	UNITS	UNITS REQUIRED	UNIT COST \$	ESTIMATED COST \$
Subcontractor - Well Logging (Century Geophysical Corp.)				
Set Up/Service Charge	LS	1	800	800
Mobilization/Demobilization	LS	2	400	800
Per Diem	Man/Day	4	150	600
Magnetic Susceptibility	Ea	1	325	325
CDL	Ea	2	350	700
Sonic	Ea	1	450	450
Slim Hole Induction	Ea	1	350	350
3-Arm Caliper	Ea	1	250	250
E-Log with Neutron	Ea	2	400	800
Televiewer	Ea	1	875	875
Subcontractor - Monitoring Well Drilling/Completion (Associated Environmental Industries, Inc.)				
Mob/Demob Rig and Support Vehicles	LS	1	3,000	3,000
Decontamination	Ea	6	150	900
Drill Air Rotary w/ 7-7/8 or 8-3/4-inch Tooth Bit	Ft	450	24.45	11,003
Complete 2-inch and 4-inch Diameter PVC Monitoring Wells	Ft	450	20	9,000
Ream and Set Surface Casing	Ft	50	51.00	2,550
Above Grade Completions	Ea	6	525	3,150
Per Diem	Crew/Day	8	425	3,400

Thank you,  
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**From:** Michael Overbay [mailto:Overbay.Michael@epamail.epa.gov]  
**Sent:** Thursday, May 03, 2012 10:53 AM  
**To:** Chris Hill (Regulatory)  
**Cc:** Doug Beak; David Jewett  
**Subject:** QAPP and contact info

Hi Chris,

Wanted to remind you that you were going to send me Bert's contact information and the QA comments from Chesapeake.

Also, we have started a review of the proposal and I had a discussion with the Ada crew this morning about it from a QA viewpoint. The QA manager for the HF study project says that these prospective projects are not like the retrospective ones in that as a collaborator on this study, EPA needs your information that we will use to meet the same QA standards as if we generated it, which is what we call Category 1 standards. Here is a link to our QAPP's for the retrospective case studies that you can use as an example.

<http://www.epa.gov/hfstudy/qapps.html>

Since we will be using the hydrogeologic data generated by your efforts to characterize the site, we will definitely have to have information on the well installation and development procedures, water level measurements, pump testing, etc. Most of that can probably be referenced to either information the driller can provide, or ASTM standard methods. We will also need the information on the procedures

the geophysics companies will use to log the wells. I have an example from the USGS on what their procedures would be (note that it includes an example of the log montage at the end):

As to the collection and analysis of environmental media samples, we will be putting our own QAPP together to do that for ourselves, but if Chesapeake wants EPA to be able to consider your sample analytical results, those sample collection and analytical procedures will have to meet our Category 1 QA requirement in order to be included in the study. Again, review the QAPPs at the link above for examples.

Finally, as to the comments Chesapeake had provided earlier, although I would still like a copy sent to me, our contractor has them and will be writing a new version of the QAPP that will consider those comments, as well as new information and procedures EPA has developed. As such, due to the time crunch (in order to construct the pad in July and allow 3 weeks for field work, we have to get the ball moving here), we won't be producing a direct response to those previous comments, but will rely on our revised QAPP to fulfill that role.

We look forward to hearing from you on Monday about Chesapeake's funding decision.

Michael Overbay, P.G.  
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